

Preparing A Notice of Intent [NOI]

The NOI Guide

Eighth Edition

Available on the Internet

The NOI Guide: <http://www.airquality.utah.gov/permits/pmtforms.htm#NOIGuide8.pdf>
Generic Forms : <http://www.airquality.utah.gov/permits/pmtforms.htm>
Official air quality rules [R307]: <http://www.rules.utah.gov/publicat/code.htm#Environmen>
AP-42: EPA's Air Pollutant Emission factors: <http://www.epa.gov/ttnchief/ap42.html>

Send your NOI to:

Richard W. Sprott, Director
Division of Air Quality
150 North 1950 West
P.O. Box 144820
Salt Lake City, Utah 84114-4820

Utah Division of Air Quality
New Source Review Section
November 1, 2002

Important Check List

Call [801]536-4000 if you have a question.

Before submitting your NOI [notice of intent] for an approval order, **please review this check list** to ensure that your NOI has all the information requested in this document. Approval orders will be issued faster, when your NOI includes all the required information.

1. **Have you reviewed the exemption provisions** of the air quality rules [R307-413] in Appendix I? You may not need an approval order.
2. Have you called DAQ's Small-Business Section to see if you qualify as a small business?
3. Have you reviewed Appendix V of this document to see if you can use a simple generic Form(s) as your permit application? They are available on the DAQ Web page.
4. Have you provided all the data requested in Section IV?
5. Have you discussed with the DAQ's SIP Planning Section any road construction or modification about and around your facility that may be caused by your proposal? This has to do with what is called transportation CONFORMITY.
6. Have you discussed in detail how you will control emission of pollutants from your facility?
7. Have you provided a detailed justification for the air pollution controls equipment you are proposing? If you are not proposing control equipment, please explain why. See Appendix II.
8. Have you provided the UTM [Universal Transverse Mercator] coordinates for your operation? This is another way of specifying the latitude and the longitude of your facility's location. If you can't determine the UTM coordinates, specify the latitude and the longitude of your operation and we'll do the conversion for you.
9. Have you read and understood the definition of "source size" in conjunction with the fees DAQ charges to review your NOI and to issue an approval order? See Appendix VII. Base and application fees to be sent with the NOI.
10. Have you read and understood the meaning of "significant emission levels" given in Table 1 in Appendix VII?
11. Have you read and understood Appendix II? It explains the need for and the scope of application of best available control technology [BACT] to industrial operation.
12. Have you read the Section in Appendix II that shows how to calculate the annualized cost of BACT?
13. Have you reviewed Appendix III of this document to determine if your facility is in an attainment or nonattainment area of the state? It makes a big difference in the permitting process where your facility is located.
14. Have you read Appendix IV and understood the circumstances and operational conditions that require dispersion modeling?
15. Have you discussed the modeling requirements with the DAQ's modeling staff?
16. Have you included in your NOI a complete modeling analysis as required by Appendix IV?

17. Have you included your address, phone & fax numbers, Email address, the UTM coordinates and the name of a contact person?
18. Have you called the permitting staff at DAQ and scheduled a Pre-NOI meeting? DAQ strongly recommends this meeting to be scheduled as soon as you have an estimate of : a) your operation and its location, b) the type and the amount of emissions expected, and c) any critical issues: financing, schedule, construction, etc.

*****Do you have a question? Call [801] 536-4000 and ask for "the NSR engineer on phone duty"*****

Preface to the Eighth Edition

This document's main purpose is the same as that of its previous editions -- to help our customers prepare a complete Notice of Intent [NOI] for an air quality approval order.

The federal and state air quality rules, including the Utah State Implementation Plan, are extensive, both in size and in implications. The industry is required to conduct operations in accordance with those rules.

Before issuing an approval order, the law requires the Division of Air Quality [Division] to review and assess a NOI for technical accuracy and completeness of a proposed design, construction, and operation. The law provides that the review of the NOI be completed within 90 days after the receipt of a complete NOI. Should additional time be required for the review, the law provides for three 30-day extensions. To perform the reviews effectively and quickly, the Division has developed this document as a guide for the reviewing engineer, as well as for those who plan to submit an NOI. We believe it will serve the industry well when preparing an NOI.

1. Please send your NOI to:

Richard W. Sprott, Director
Division of Air Quality
P.O. Box 144820
Salt Lake City, Utah 84114-4820

The new items in this edition includes the following:

1. Appendix VII includes a revised fee structure for approval orders.
2. Forms listed in Appendix V have been updated. These generic forms simplify the permitting process. You should review this Appendix before preparing your NOI.
3. This document may be made available to you in hard copy or on 3.5-inch compact disk in Word or WordPerfect. You may also obtain a copy of this Guide through the Internet at <http://www.deq.state.ut.us/eqair/permits/pmtforms.htm#NOIGuide>.

We welcome your comments on how to improve this document. Please send your comments to the Editor and your suggestions will be considered in the future editions.

Editor's Email: MBeheshti@Utah.gov

Finally, for quick and accurate answer to your questions, please direct them to appropriate people as shown below. You may reach any of these groups by calling [801] 536-4000 and asking for the appropriate section.

Air Quality Modeling:	Technical Analysis Section
Annual Emission Fees:	Operating Permit Section
Approval Orders:	New Source Review Section
Engineering:	New Source Review Section
Hazardous Air Pollutants:	DAQ's Toxicologist
MACT Standards:	MACT Coordinator
Maintenance Areas:	SIP Inventory Section

Variou Sections at the DAQ have contributed to this *NOI Guide*. Section V of the Guide -- Do You Need an Operating Permit? -- was originally prepared by the DAQ's Operating Permit Section. Appendix I is a duplication from Utah's official air quality rules under the supervision of Ms. Jan Miller. Appendixes II is from an EPA document. Appendix III and IV have been contributed by Tom Orth and David Prey, DAQ's Technical Analysis Section. I wish to thank them all.

I would also like to thank members of the technical staff at the New Source Review Section [NSR], Rusty Ruby, Manager, NSR Section, and Reginald Olsen, DEQ's Branch Manager for their close reading of the draft document and making pertinent comments. This eighth edition of the Guide is a more helpful document because of those contributions.

Mike Beheshti, Editor

Acronyms, Abbreviations, and Definitions

CAA[A]	Clean Air Act [Amendments] of 1990
AO	Approval Order, same as an air quality permit to construct
APCE	Air pollution control equipment
Attainment areas	Areas of the state that are NOT in violation of NAAQS
BACT	Best available control technology [for new or modified sources]
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO ₂	Carbon dioxide
DAQ	Utah Division of Air Quality
DEQ	Utah Department of Environmental Quality
dscfm	Dry standard cubic feet per minute
EPA	U.S. Environmental Protection Agency
gr	Grain, 1/7000 lb; 7000 grains = one pound
HAP	Hazardous air pollutant
hr	Hour
lb	Pound mass
LAER	Lowest achievable emission rate [See Utah Air Quality Rule R307-403]
MACT	Maximum achievable control technology
Maintenance Area	See Appendix III
Major source	See the definitions in R307 on the Internet [see address on the cover sheet]
Micron	A unit of length equal to one millionth of a meter
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants [Listed in 40 CFR 61 & 63]
NAA	Non-Attainment Areas: Listed in Appendix III
NOI	Notice of Intent to construct, same as an application for an approval order
NO _x	Oxides of nitrogen, combined
NSPS	New Source Performance Standard [Listed in 40 CFR 60]
NSR	New Source Review
O ₃	Ozone
OP	Operating Permit
OPP	Operating Permit Program
PM ₁₀	The size of particulate matter up to and including 10 microns
PM _{2.5}	The size of particulate matter up to and including 2.5 microns
ppmdv	Parts per million based on dry volume of the gas
PSD	Prevention of significant deterioration [for areas whose air is cleaner than NAAQS]
PV	Present value of the equipment
RACT	Reasonably available control technology for VOC [for existing sources in non-attainment areas].
SCREEN3	Name of a computer model that computes pollutant concentration in air
Sec	Seconds
SIP	State Implementation Plan
SO _x	Oxides of sulfur, combined
Synthetic minor status:	When a source accepts an emission limit below the level of becoming a major source.
TLV	Threshold limit value [see Appendix IV]
TPD	Tons per day
TSP	Total suspended particulate matter -- irrespective of size
UAC	Utah Administrative Code
UAQR	Utah Air Quality Rules [R307]
UTM	Universal Transverse Mercator [another way of expressing the latitude and the longitude of a facility]
VOC	Volatile organic compound, like benzene, toluene, alcohol, etc

TABLE OF CONTENTS

Title Page.....	
Important Check List	ii
Preface to the Seventh Edition.....	iv
Acknowledgment.....	v
Acronyms, Abbreviations, and Definitions	vi
Table of Contents	vii
I. Introduction	1
II. Exemption From Notice of Intent	1
III. Your Notice of Intent (NOI)	1
IV. Data Requirements.....	1
Table - Air Contaminant Fact Sheet.....	5
V. Do You Need an Operating Permit?.....	6
VI. The Review of Your NOI	6
Appendix I. Exemption Criteria Under R307.....	8
Appendix II. Best Available Control Technology [BACT].....	12
Appendix III Non-attainment Areas In Utah	18
Appendix IV. Dispersion Modeling Guidelines	19
Appendix V. Generic Permit Forms.....	23
Appendix VI. Pre-NOI Meeting A Check List.....	24
Appendix VII. Fee Schedule	25

Internet addresses for:

NOI Guide: <http://www.deq.state.ut.us/eqair/permits/pmtforms.htm#NOIGuide>

Official air quality rules [R307]: <http://www.rules.state.ut.us/dar.htm>

AP-42: EPA's Air Pollutant Emission factors: <http://www.epa.gov/ttnchie1/ap42.html>

Generic Forms: <http://www.deq.state.ut.us/eqair/permits/pmtforms.htm>

I. Introduction

In Utah, one must have an air quality permit to build, own, or operate a facility that pollutes the air. In the statute, an application for such a permit is called a Notice of Intent [NOI] to construct. It should be submitted to Utah Division of Air Quality [DAQ]. The permit is called an Approval Order [AO]. The review of the NOI and the writing of the AO proceed in accordance with the federal and state laws and regulations [See Section VI below].

II. Exemption from Notice of Intent:

Your facility and its operation may not require an AO. Please see Appendix I for the exemption criteria.

III. Your Notice of Intent [NOI]

Before getting an AO to build a source of potential air pollution, the owner or the operator must submit an NOI to DAQ. If you have doubts whether or not you need an AO, call the New Source Review [NSR] Section of DAQ to find out. Also, before preparing an NOI, it is advisable that you call the NSR Section and schedule a Pre-NOI meeting with the staff. **This Guide is prepared to help our customers know what questions to ask in Pre-NOI discussions with DAQ staff and how to prepare a complete NOI.** The next section lists, item by item, the information you should include in your NOI.

IV. Data Requirements:

If you intend to build and install, or operate any facility similar to those listed in Appendix V, call the NSR Section [(801) 536-4000] and ask for a copy of the generic permit form, **fill it out per instructions and send it to DAQ.** The forms are also available on the DAQ Web page as shown in the appendix. These simple permitting forms, when completed, serve as an NOI. If you have access to the Internet, you may find the Forms at the Internet address for the NOI Guide. This address is listed on the cover page.

Use one or more of the generic forms in Appendix V to provide information sufficient to review your proposed action and issue an AO. If none of the Forms fits your proposal or allows you to provide complete information, you should submit a NOI as described in this document.

Give your complete address including the UTM coordinates of the facility. **If you need help in determining the UTM coordinates of your facility, call [801] 536-4000 and ask to speak with the Modeling Section.**

If you are submitting an NOI, please include the following:

- A. Complete data and their discussion, if necessary, to help us understand your proposed air pollution controls and process [see Appendix II for more details.] This helps us to issue your AO quickly. If you can send your NOI on a disk in WordPerfect [any version] or Word format, it will save us time and you will get your AO faster.
- B. Describe the processes in detail, include the following:
 - 1. A list of all air pollution-producing equipment
 - 2. A process flow diagram

3. A list of the type and quantity of raw feed materials, finished products and by-products and the waste produced
 4. A list or description of the chemical reactions involved in your processes. They affect the emissions.
 5. A list of all pollution control equipment
- C. List potential emission points and air contaminants from each point. Include in this list air contaminants that may result from upset conditions in your operation or from failure of your air pollution control equipment [APCE].
- D. Describe in detail the APCE and operational procedures you have chosen to minimize emissions. [For example, reduced traffic speed, application of moisture to feed material, production rate, etc]
- E. The emission rates of the air contaminants you have calculated for each emission point listed in #B above. Include the following:
1. List the normal annual rates¹ and hourly emission rates² [in tons per year and pounds per hour] that may result from your operation for each of the following conditions:
 - a) When the pollution control equipment, operational practices, and processes function properly, i.e. emissions are controlled.
 - b) When none of the pollution control equipment or operational procedures are working, i.e. emissions are uncontrolled emissions.
 2. List your estimated hourly and annual quantities of air contaminants that may be released as a result of a typical failure of the process or pollution control devices or procedures during a typical year.
 3. For those sources that have emissions through a stack³, Table 1 should be copied and completed, indicating the gas flow rate, contaminant concentration, and other information indicated in Table 1.
- F. Give calculations of the emission estimates of item E above. Include equations, and all relevant emission factors. Explain all assumptions that you may have made in your calculations. The EPA's Air Pollution document entitled AP-42, Compilation of Air Pollutant Emission Factors, Volume I: Stationary Points and Area Sources, may be used as a reference when applicable. Also, in some cases, the results from properly conducted stack tests may be used as emission factors. Copies of AP-

¹Used for inventory purposes at normal operating conditions.

²To be verified during compliance testing at maximum possible controlled release rate. Production rate during compliance test will be 90% of the maximum capacity.

³Stack means any point in a source designed to emit solids, liquids, or gases into the air, including a pipe or duct, but not flares.

42 may be obtained from Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. Or on the Internet at: <http://www.epa.gov/ttnchie1/ap42.html>

- G. Conduct a BACT [best available control technology] analysis. Explain why the pollution control equipment, operational practice, [or no control] you have selected should be considered best available control technology [BACT]. **In some cases no control may be justified. Please read Appendix II on BACT and discuss with NSR staff before submitting any BACT information.**
- H. Give the mailing address of source's owner, and the name and the phone number of a contact person.
- I. Read R307-405 to determine if your source is a major PSD [prevention of significant deterioration] source. **If so, provide the information asked for in section R307-405.** If you need a clarification of this requirement, please call the NSR section at [801] 536-4000 and ask to talk to the NSR engineer on phone duty.
- J. Read in R307-101-2 and R307-405-1, the definition of a major source and a major modification. Determine if your source falls under these categories and if it affects any area designated as non-attainment. If so, your source must use control equipment that produces lowest achievable emission rates [LAER], which will be less than those from the application of BACT. {Non-attainment areas are counties, cities, and locales that are in violation of one or more of the national ambient air quality standards [NAAQS]. **See Appendix III in this Guide for a list of non-attainment areas in Utah.**} If your source is located in a non-attainment area, provide the following information:
 - 1. Show that your pollution control equipment meets the requirements of "lowest achievable emission rate [LAER]. LAER is a more stringent requirement than BACT.
 - 2. Show that all other sources owned by the same person(s) under common control are in compliance with R307 and State Implementation Plan (SIP), or are on an approved compliance schedule.
 - 3. Provide a list of available emission credits of the same air contaminant that **can be used** to offset the increase in emission from your operation. **[See R307-403 for offset rules.** Call Division of Air Quality at [801] 536-4000 and obtain a list of available offsets from a member of the Administrative staff.]
 - 4. Provide an analysis of alternative sites, sizes, production processes, emission control equipment, and/or processes, if your facility is a major source. Show that the benefits of proposed site for your facility outweigh its environmental costs and impact.
- K. Provide the results of your air quality modeling [dispersion modeling]. **For these requirements, please refer to Appendix IV -- Dispersion Modeling Guidelines.**

TABLE 1.

Air Contaminant Fact Sheet
Emission Point * _____

Contaminant	Emission					Stack Flow Rate dscfm	Gr/dscf or ppmdv from Stack exit	Expected/estimated Upset Conditions		BACT Considerations**
	Uncontrolled		Controlled							
	lb/hr	TPY	lbs/hr	TPY	Gram/Sec			lbs/hr	tons/yr	

*Use one Table for each emission point. List all emission points [from stack, from equipment, from areas or points of fugitive dust, including mobile equipment on site at the operation]. **Have you included the UTM coordinates of your operation? You may need more than one, if your property covers a large area.**

**List all options and the resulting limitations considered, identify your choice by an asterisk [see Appendix II, page 11]. Use additional sheets, if needed.

V. Do You Need an Operating Permit?

Title V of the 1990 Clean Air Act requires that certain industrial sources obtain an operating permit (OP) and pay annual emission fees based on the amount of pollutants they actually emit (see Appendix VII). The Operating Permit Requirements are found in R307-415. This is not the same permit (i.e., the AO) that you had to obtain to build, or modify your source. The following list will assist you in determining if you should apply for an OP:

1. Sources subject to a NSPS or NESHAP [including MACT (maximum achievable control technology)], established by EPA⁴.
2. Sources that have the potential to emit 100 tons per year or more of any air pollutant.
3. Sources that have the potential to emit 10 tons per year or more of any single hazardous air pollutant (specifically listed in the Clean Air Act), or those that have the potential to emit 25 tons per year or more of a combination of hazardous air pollutants.
4. Sources subject to Title IV of the CAA entitled [Acid deposition Control].
5. Solid Waste Incinerators, per Section 129(e) of the CAA.

If, after you receive an OP, you desire to modify your operations or your permit, you will be required to obtain a revised OP. In most cases that will require submittal of an NOI (as outlined in this guide) to have the modification reviewed and approved. The law requires you not to begin operation until your operating permit has been modified.

Please call 801-536-4000 and ask for an operating permit staff member if you have questions about OP applications or revisions.

VI. The Review of Your NOI

We use the following federal and state guidelines, rules, regulations and standards to review your NOI.

- A. The Clean Air Act
- B. National Ambient Air Quality Standards (NAAQS)
- C. Utah Administrative Code, and its subset, R307
- D. State Implementation Plan (SIP)
- E. New Source Performance Standards (NSPS: 40 CFR 60)
- F. National Emission Standards for Hazardous Air Pollutants (NESHAPS: 40 CFR 61 & 63).

⁴ Standards of Performance for New Stationary Sources [CFR 40, Part 60, incorporated by reference under R307-210], National Emission Standards for Hazardous Air Pollutants [CFR 40, Part 61 & 63, incorporated by reference under R307-214.]

In addition, we use established test data and engineering principles to write [AOs]. The AOs impose operational conditions upon the facilities to minimize the emission of pollutants into the atmosphere. The operation of your facility must comply with the AO at all times.

We have used the above documents to develop a procedure that our engineers use to review your NOI and develop your AO. **DAQ staff does not do calculations for you.** They only review and validate the analyses and calculations you present in the NOI.

Appendix I

Exemption Criteria Under R307 -- Environmental Quality, Air Quality.

R307. Environmental Quality, Air Quality.

R307-413. Permits: Exemptions and Special Provisions.

R307-413-1. Definitions and General Requirements.

(1) The following additional definitions apply to R307-413-7.

"Boiler" is defined in R315-1-1, which incorporates by reference 40 CFR 260.10, and is identified as follows:

- (a) an industrial boiler located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes;
- (b) a utility boiler used to produce electric power, steam, heated or cooled air, or other gases or fluid for sale;
- (c) a used-oil fired space heater provided that the burner meets the provisions of R315-15-2.4.

"Used Oil" is defined as any oil that has been refined from crude oil, used, and, as a result of such use contaminated by physical or chemical impurities.

(2) Any control apparatus installed on a source that is exempted under R307-413-2 through 6 shall be adequately and properly maintained. The owner or operator of any new or existing emission unit that is exempted under R307-413-2 through 6 is required to comply with all other applicable rules in Title R307.

(3) If the executive secretary has reason to believe, after completion of an appropriate analysis and evaluation in consultation with the source owner or operator, that the emissions from a source described in R307-413-2 through 6 are not meeting any specified approval order or State Implementation Plan limitation, or create an adverse impact to the environment, or would be injurious to human health or welfare, then the notice of intent and approval order provisions of R307-401 will apply.

R307-413-2. Small Source Exemptions - De minimis Emissions.

(1) A new or existing stationary source is exempt from the notice of intent and approval order requirements of R307-401 if the following conditions are met:

- (a) it is not regulated by any standard or requirement of 42 U.S.C. 7411 or 7412;
- (b) its potential to emit does not make it a stationary major source or require emission offset provisions as required by R307-403 for a new or modified source;
- (c) its actual emissions are less than 5 tons per year per air contaminant of any of the following air contaminants: sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM₁₀), ozone (O₃), or volatile organic compounds (VOCs);
- (d) its actual emissions are less than 500 pounds per year of any hazardous air pollutant and less than 2000 pounds per year of any combination of hazardous air pollutants;
- (e) its actual emissions are less than 500 pounds per year of any air contaminant not listed in (c) or (d) above and less than 2000 pounds per year of any combination of air contaminants not listed in (c) or (d) above; and
- (f) for purposes of determining applicability of R307-413-2, other air contaminants that are drawn from the environment through equipment in intake air and then are released back to the environment without chemical change, as well as carbon dioxide (CO₂), nitrogen (N₂), oxygen (O₂), argon (Ar), neon (Ne), helium (He), krypton (Kr), xenon (Xe) should not be included in emission calculations.

(2) Small Source Exemption - Registration Required in Nonattainment and Maintenance Areas. The owner or operator of a stationary source located in a nonattainment area or a maintenance area for the air contaminants, including ozone precursors, that is claiming an exemption under R307-413-2 shall submit to the executive secretary a written registration notice. An existing source shall submit this registration notice no later than March 15, 1997. A new source shall submit the registration notice prior to commencing construction. The notice shall include the following minimum information:

- (a) identifying information including company name and address, location of source, telephone number, and name of plant site manager or point of contact;
- (b) a description of the nature of the processes involved, equipment, anticipated quantities of materials used, the type and quantity of fuel employed and nature and quantity of the finished product;
- (c) identification of expected emissions;

- (d) estimated annual emission rates;
- (e) any control apparatus used; and
- (f) typical operating schedule.

(3) The owner or operator of a temporary source that is claiming exemption under R307-413-2 must still comply with the conditions of R307-401-7.

R307-413-3. Flexibility Changes.

(1) A change to an existing stationary source is exempt from the notice of intent and approval order requirements of R307-401 if the source is covered by an approval order and the change satisfies the following conditions:

- (a) the change is not regulated by any standard or requirement of 42 U.S.C. 7411 or 7412,
- (b) the increases in allowable emissions from the change since the issuance of the current approval order for the source are less than:

- (i) 5 tons per year per air contaminant of any of the following air contaminants: sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM₁₀), ozone (O₃), or volatile organic compounds (VOCs);

- (ii) 500 pounds per year of any hazardous air pollutant and 2000 pounds per year of any combination of hazardous air pollutants; and

- (iii) 500 pounds per year of any air contaminant not listed in (i) or (ii) above and 2000 pounds per year of any combination of air contaminants not listed in (i) or (ii) above;

- (c) for purposes of determining applicability of R307-413-3, other air contaminants that are drawn from the environment through equipment in intake air and then are released back to the environment without chemical change, as well as carbon dioxide (CO₂), nitrogen (N₂), oxygen (O₂), argon (Ar), neon (Ne), helium (He), krypton (Kr), xenon (Xe) should not be included in emission calculations;

- (d) the increase of allowable emissions from the change is accompanied by an equivalent or greater decrease of allowable emissions of the same air contaminants within the source at the time of the change, so long as the emissions decrease is enforceable in an approval order;

- (e) the net emissions increase at the source, as defined in R307-101-2, as a result of the change shall not constitute a major modification, as defined in R307-101-2; and

- (f) The owner or operator claiming an exemption pursuant to R307-413-3 submits to the executive secretary a written notice prior to the change. The notice shall include the information specified in R307-413-2(2)(a) through (f) and a description of where the owner or operator will reduce allowable emissions at least equal to any increase in emissions from the change.

(2) The approval order shall reflect emission increases and decreases of emitting units at the source resulting from the change.

(3) A source must go through the full Notice of Intent and Approval Order requirements of R307-401 to change any limitation which a source is relying on, either to avoid being classified as a major source, or to avoid having a change in emissions be considered a major modification.

(4) No comment period under R307-401-4 is required for this approval order change and update.

R307-413-4. Other Exemptions.

The following sources are exempt from the notice of intent and approval order requirements of R307-401.

(1) Fuel-burning equipment in which combustion takes place at no greater pressure than one inch of mercury above ambient pressure with a rated capacity of less than five million BTU per hour using no other fuel than natural gas or LPG or other mixed gas that meets the standards of gas distributed by a utility in accordance with the rules of the Public Service Commission of the State of Utah is exempt, unless there are emissions other than combustion products.

(2) Comfort heating equipment such as boilers, water heaters, air heaters and steam generators with a rated capacity of less than one million BTU per hour if fueled only by fuel oil numbers 1 - 6 is exempt.

(3) Emergency heating equipment, using coal or wood for fuel, with a rated capacity less than 50,000 BTU per hour is exempt.

(4) Exhaust systems for controlling steam and heat that do not contain combustion products are exempt.

(5) New parking areas of less than 600 vehicles capacity or modified parking areas increasing capacity by less than 350 vehicles are exempt.

(6) Emissions of 1,1,1-trichloroethane, trichlorofluoromethane, dichlorodifluoromethane, chlorodifluoromethane,

trifluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichloro-1,1,2,2-tetrafluoroethane, methane, ethane, and chloropentafluoroethane are exempt. However, the owner or operator of a source emitting 10 tons per year or more of any of these compounds must submit a notice of intent to the executive secretary prior to construction of the source.

R307-413-5. Replacement-in-Kind Equipment.

(1) Applicability. The owner or operator of a stationary source of air contaminants who modifies any process or replaces any control apparatus that is covered by an existing approval order, a previous approval order that has been superseded by an operating permit, or a requirement contained in a State Implementation Plan is exempt from the notice of intent and approval order requirements of R307-401, when the replacement-in-kind equipment meets all of the following conditions:

- (a) potential to emit of the process equipment is the same or lower;
- (b) the number of emission points or emitting units is the same or lower;
- (c) no additional types of air contaminants are emitted as a result of the replacement;
- (d) the control apparatus or process equipment is essentially the same as that being replaced and is not regulated by any standard or requirement of 42 U.S.C. 7411 or 7412;
- (e) the replacement of the control apparatus or process equipment does not violate any other provision of Title R307.

(2) Replacement-in-Kind Procedures.

(a) In lieu of filing a notice of intent under R307-401, an owner or operator of a stationary source proposing to replace control apparatus or process equipment by in-kind equipment shall submit a written notification to the executive secretary for approval prior to initiation of replacement. The notification shall contain a description of the replacement-in-kind, to include the control capability of any control apparatus and a demonstration that the conditions of (1) above are met.

(b) If the replacement-in-kind meets the conditions of (1) above, the executive secretary will update the appropriate approval order and notify the owner or operator. No public comment period under R307-401-4 is required.

R307-413-6. Reduction of Air Contaminants.

(1) Applicability. The owner or operator of a stationary source of air contaminants covered by an existing approval order or a State Implementation Plan that reduces or eliminates air contaminants by changing, substituting, or eliminating process raw materials or process equipment, or uses a more efficient process design, is exempt from the notice of intent and approval order requirements of R307-401, when all the following are met:

- (a) there is a permanent reduction of air contaminants per year that is enforceable by an approval order;
- (b) there are no new air contaminants emitted as a result of the changes; and
- (c) the changes do not violate any provision of Title R307 rules.

(2) Procedures for the Reduction or Elimination of Air Contaminants Exemption. In lieu of filing a notice of intent under R307-401, an owner or operator of a stationary source making changes as described in (1) above shall submit a written description of the changes to the executive secretary no later than 60 days after the changes are made. The approval order will be updated by the executive secretary to reflect the reductions and other changes; no comment period under R307-401-4 is required.

R307-413-7. Exemption from Notice of Intent Requirements for Used Oil Fuel Burned for Energy Recovery.

(1) Exemption. Boilers burning used oil for energy recovery are exempt from the notice of intent requirement of R307-401 if the following requirements are met:

- (a) The heat input design is less than one million BTU/hr.
- (b) Contamination levels of all used oil to be burned do not exceed any of the following values:
 - (i) Arsenic - 5 ppm by weight
 - (ii) Cadmium - 2 ppm by weight
 - (iii) Chromium - 10 ppm by weight
 - (iv) Lead - 100 ppm by weight
 - (v) Total halogens - 1,000 ppm by weight
 - (vi) Sulfur - 0.50% by weight.
- (c) The flash point of all used oil to be burned is no less than 100 degrees Fahrenheit.

(2) Requirements. The owner/operator of boilers burning used oil for energy recovery which are exempt under (1) above shall only burn used oil meeting the requirements of (1)(b) and (c) above and shall test each load of used oil received or generated as directed by the executive secretary to insure it meets these requirements. Testing may be performed by the owner/operator or

documented by test reports from the used fuel oil vendor. The flash point must be measured using the appropriate ASTM method as required by the executive secretary. Records for used oil consumption and test reports are to be kept for all periods when fuel burning equipment is in operation. The records shall be kept on site and made available to the executive secretary or his representative upon request. Records must be kept for a three year period.

R307-413-8. De minimis Emissions From Air Strippers and Soil Venting Projects.

(1) An owner or operator of an air stripper or soil venting system will not be required to obtain an approval order under R307-401 to conduct remediation of contaminated groundwater or soil, if the owner or operator submits written documentation of the following to the executive secretary prior to beginning the remediation project:

(a) the estimated total air emissions of volatile organic compounds from a given project are less than the de minimis emissions listed in R307-413-2(1)(c), and

(b) the level of any one hazardous air pollutant or any combination of hazardous air pollutants is below the levels listed in R307-410-4(1)(d).

(2) After beginning the soil re-mediation project, the owner or operator shall submit emissions information to the executive secretary to verify that the emission rates of the volatile organic compounds and hazardous air pollutants in (1) are not exceeded. Emissions estimates of volatile organic compounds and hazardous air pollutants shall be based on test data obtained in accordance with the test method in the EPA document SW-846, Test #8020 or #8021 or other test or monitoring method approved by the executive secretary. Results of the test and calculated annual quantity of emissions of volatile organic compounds and hazardous air pollutants shall be submitted to the executive secretary within one month of sampling. The test samples shall be drawn on intervals of no less than twenty-eight days and no more than thirty-one days (i.e., monthly) for the first quarter, quarterly for the first year, and semi-annually thereafter or as determined necessary by the executive secretary.

(3) The following control devices do not require an approval order under R307-401 when used in relation to an air stripper or soil venting project applicable to this rule:

(a) thermo-destruction unit with a rated input capacity of less than five million BTU per hour using no other auxiliary fuel than natural gas or LPG, or

(b) carbon adsorption unit.

R307-413-9. De minimis Emissions From Soil Aeration Projects.

An owner or operator of a soil re-mediation project is not required to obtain an approval order under R307-401 when soil aeration or land farming is used to conduct a soil re-mediation, if the owner or operator submits written documentation of the following to the executive secretary prior to beginning the re-mediation project:

(1) the estimated total air emissions of volatile organic compounds, using an appropriate sampling method, from a given project are less than the de minimis emissions listed in R307-413-2(1)(c);

(2) the levels of any one hazardous air pollutant or any combination of hazardous air pollutants are less than the levels in R307-410-4(1)(d); and

(3) the location of the remediation and where the remediated material originated.

KEY: waste oil*, permits, exemption*, de minimis*

1998

19-2-104

19-2-108

Appendix II

BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

Summary

Every facility, operation, or process that proposes any activity that would emit an air contaminant into the air, must by law consider the best control of all the emissions. You may achieve control by means of a) good process design, b) sound operating practices, c) best emission control devices available, or d) a combination of these means. In choosing and proposing pollution control strategies, you should consider their adverse effects: for example, Do they use too much energy? Do they have other bad effects on the environment? Is the control cost prohibitive for your business? The following discussion clarifies these issues. It also shows how to compute the cost of air pollution control for your operation.

At the present time, the Division of Air Quality considers as reasonable \$5000.00 per ton of pollutant removed.

BACT Rules:

R307-401-6 "The Executive Secretary shall issue an approval if it is determined through plan review that the following conditions have been met:

(1) The degree of pollution control for emissions, to include fugitive emissions and fugitive dust, is at least best available control technology except as otherwise provided in these regulations."

R307-101-2: *"Best Available Control Technology (BACT)" means an emission limitation and/or other controls to include design, equipment, work practice, operation standard or combination thereof, based on a maximum degree of reduction of each pollutant subject to regulation under the Clean Air Act and/or the Utah Air Conservation Act emitted from or which results from any emitting installation, which the Air Quality Board, on a case-by-case basis taking into account energy, environmental and economic impacts and other costs, determines is achievable for such installation through application of production process and available methods, systems and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of each such pollutant. In no event shall application of BACT result in emission of pollutants which will exceed the emissions allowed by section 111 or 112 of the Clean Air Act."*

As the rule states, the source is obligated to base its proposed BACT on the most effective engineering techniques and control equipment to minimize emission of air contaminants into the outside environment from its process. DAQ requires the industry to make every effort to identify the most technically efficient pollution control devices available. Your choice of the best control device is neither absolute nor arbitrary. The merits and the demerits of each device or technique should be explored, and the investigation must include all potentially applicable devices.

Hundreds of BACT determinations/approvals have been issued by the DAQ. These are on file at the DAQ. Many are for similar operations and may apply to your particular, but similar, operation. Discuss this situation with the DAQ staff before performing your BACT analyses.

The following five criteria should be used when analyzing strategies to achieve BACT.

1. The energy impacts
2. The environmental impacts
3. The economic impacts
4. Other considerations
5. Cost calculation

Energy Impacts

The energy impact analysis actually should be conducted before the economic impact analysis, although energy is just one of the elements considered in the latter analysis.

Applicants should examine the energy requirements of the control technology being considered and determine whether the use of that technology results in any significant or unusual energy penalties or benefits. A source may, for example, benefit from the combustion of a concentrated gas stream rich in VOCs. On the other hand, more often extra fuel or electricity is required to power a control device or incinerate a dilute gas stream. If such penalties or benefits exist, they should be quantified. Certain types of control technologies have inherent energy penalties associated with their use. While these penalties should be quantified, so long as they are within the normal range for the technology in question, such penalties should not, in general, be considered adequate justification for not using that technology.

Energy impacts should consider only direct energy consumption and not indirect energy impacts. Energy impacts should be analyzed on an absolute and incremental basis. For example, the applicant could estimate the direct energy impacts of the control alternative in units of energy consumption at the source. Energy usage should be converted to BTU and barrel-of-oil equivalents. The energy requirements of the control options should be shown in terms of total and incremental (units of energy per ton of reduction) energy costs.

Environmental Impacts

The **environmental impacts analysis** is not to be confused with **the air quality impact analysis**, which is conducted to demonstrate that the source (using the level of control eventually selected as BACT) will not cause or contribute to a violation of any applicable NAAQS or PSD increment.

The primary purpose of the air quality impact analysis is to minimize consumption of NAAQS and PSD increment and to preserve ambient concentrations so as to maintain the potential for future economic growth. Ground level impact and ground level concentrations must be determined. Maximum impacts should be determined. The impact area should also be determined.

The **environmental impacts analysis**, in contrast, concentrates on impacts other than impacts on air quality (i.e., ambient concentrations) due to emissions of the regulated pollutant in question, such as solid or hazardous waste generation or discharges of polluted water from a control device, visibility impacts, or emissions of unregulated pollutants.

The applicant should identify any significant or unusual environmental impacts associated with a control alternative that have the potential to affect the selection or rejection of that control alternative. Some control technologies may have potentially significant secondary [other than air quality] environmental impacts. Scrubber effluent, for example, may affect water quality and land use; and, similarly, technologies using cooling towers may affect visibility.

Other examples of secondary environmental impacts may include hazardous waste discharges, such as spent catalysts or contaminated carbon. Generally, these types of environmental concerns become important when sensitive site-specific receptors exist or when the incremental emissions reduction potential of the top control option is only marginally greater than the next most effective option. However, the fact that a control device creates liquid and solid waste that must be disposed does not necessarily argue against selection of that technology as BACT, particularly if the control device has been applied to similar facilities elsewhere and the solid or liquid waste problem under review is not significantly greater than in those other applications. On the other hand, where the applicant can show that unusual circumstances at the proposed source create greater problems than experienced elsewhere, this may provide a basis for the rejection of the most efficient alternative as BACT.

The generation or reduction of toxic and hazardous emissions, including compounds not regulated under the Clean Air Act, are considered as part of the environmental impacts analysis. On June 23, 1986, the EPA Administrator remanded the PSD permit decision for the North County Resource Recovery project in California to EPA Region XI for reconsideration. At issue in the remand was whether appropriate consideration had been given, within the BACT determination, to the control of air contaminants not subject to regulation under the Clean Air Act. The remand strongly affirmed that the permitting authority should take into account the ability of a given control alternative for regulated pollutants to reduce emissions of **unregulated pollutants**⁵ in making BACT decisions. Consequently, the ability of a given control alternative to control toxic or hazardous air contaminants must also be considered in the BACT analysis and, as appropriate, may affect the outcome of the analysis.

Economic Impacts

In the economic impact analysis, primary consideration should be given to quantifying the cost of control (e.g., total cost, dollars per ton of pollutant removed, incremental costs per ton of pollutant removed) and not the economic situation of the individual source. It addresses all the costs of emission control. All data is to be reported on a "before taxes" basis. For control alternatives that have been effectively employed in the same source category, the economic impact of such alternatives on the particular source under review should be not nearly as pertinent to the BACT decision making process as the total and incremental cost effectiveness of the alternative. Thus, where a control technology has been successfully applied to similar sources in a source category, an applicant should concentrate on documenting significant cost differences, if any, as total annualized costs, between those other sources and the particular source under review.

Normally, the submittal of very detailed and comprehensive project cost data is not necessary. However, where initial control cost projections on the part of the applicant appear excessive or unreasonable (in light of recent cost data), more detailed and comprehensive cost data may be necessary to document the applicant's projections.

Pollutant quantity reduction should be determined on an annual or some other logical cyclical basis that permits a realistic calculation of emissions that considers maintenance or any other downtime associated with the emissions unit being reviewed. For strategies that abate more than one pollutant, the control costs should be divided among all applicable pollutants and then included in each pollutant's analysis.

It is important to keep in mind that BACT is a primarily technology-based standard. However, unusual circumstances may greatly affect the cost of controls in a specific application and should be documented. An example of an unusual circumstance might be the unavailability in an arid region of the large amounts of water needed for a scrubbing system. Shipping water from a distant location might add unreasonable costs to the alternative, thereby justifying its rejection on economic grounds. Where unusual factors exist that result in cost/economic impacts beyond the range normally incurred by other sources in that category, the technology can

⁵In Utah all air contaminants are regulated. *The MOC Guide, September 10, 2002*

be rejected provided the applicant has adequately identified the circumstances, including the cost or other analyses, that show what is significantly different about the proposed source.

Where the cost of a control alternative for the specific source being reviewed is within the range of normal costs for that control alternative, the alternative may also be eligible for rejection in limited circumstances. This may occur, for example, where the control alternative has not been required as BACT (or its application as BACT has been extremely limited), and there is a clear demarcation between recent BACT control costs in that source category and control costs for sources in the category which have been driven by other constraining factors. To justify rejection of an alternative on these grounds, the applicant must demonstrate to the satisfaction of DAQ that costs of pollutant removal (e.g., dollars per total ton removed and in some instances incremental ton removed) for the control are too high when compared to the cost of control for the pollutant in recent acceptable BACT determinations.

Specifically, the applicant must document that the cost of the control alternative is significantly beyond the range of recent costs normally associated with BACT for the type of facility (or BACT control costs in general) for the pollutant. This type of analysis should essentially demonstrate that a technically and economically feasible control option is, nevertheless, by virtue of the magnitude of its associated costs and limited application, unreasonable or otherwise not achievable as BACT in the particular case. Total cost and cost effectiveness numbers should be factored into this analysis. However, such economic information must be coupled with a comprehensive demonstration, based on the other objective factors described in this document, that the technology is inappropriate in the specific circumstance.

Significant impacts of the following economic factors should be considered:

Pollution-specific costs [\$\$ per ton emitted] - See background information documents (BID) issued by EPA to support NSPS. An NSPS is designed to reflect the degree of emission reduction achievable through the application of the best technological system of continuous control taking into consideration the cost of achieving the emission reduction and any non-air quality health and environmental impact and energy requirements. DAQ has often considered NSPS control requirements and the resulting limitations as a minimum BACT requirement. The degree of emission control may be higher than the minimum, but never lower than is required in an NSPS.

Additional product costs (dollars per unit of production) - The percentage of total manufacturing costs that the cost of additional emission control represents should be included in this evaluation. This information will determine if, and to what degree, the applicant will be at a competitive disadvantage in the market place because of the cost of an alternative control option.

Also, the BACT analysis should not focus on only one element of the economic analysis, as the results may be misleading. In particular, undue focus on incremental cost effectiveness can give an impression that the cost of a control alternative is unreasonably high when in fact the total cost effectiveness is well within the normal range. For another example, there may be a case where the capital cost of a control option appears excessive when presented as a percent of the total project cost. However, if in this case a large emissions reduction is projected, low or reasonable cost effectiveness numbers may validate the option as an appropriate BACT alternative irrespective of the high capital costs.

Other Considerations

The following is a list of other possible circumstances, not necessarily economic in nature, which might affect a BACT proposal:

1. When exceeding otherwise appropriate costs by a moderate amount would result in a substantial additional emissions reduction.
2. When a control technology would achieve controls of more than one pollutant [including HAPs].
3. When there are legal constraints such as a SIP or state rule, requiring the application of a more stringent technology than one which otherwise would have been determined to be BACT.
4. Any time a permit limit, which is founded on BACT, is considered for revision, the original BACT analysis will be reviewed to determine its adequacy, even if the permit limit is exceeded by less than the significant amount.
5. The cost of all controls, including existing controls and any proposed control improvements, should be expressed in terms of a single dollar year, preferably the current year. Any proposed improvements should then be added to that cost, also in today's dollars.
6. EPA cannot provide a specific cost figure for cost/ton of pollutant removed without contradicting the PSD definition of BACT. They recognize that a case-by-case evaluation is inherently judgmental and can be particularly difficult without a cost guideline.
7. A top-down BACT analysis is recommended by EPA and required by Utah. "Top-down" means an investigation of the best, second best, third best, etc, control technology and their associated costs.
8. Utah must ensure that any technically feasible improvements to existing controls that would fall within the realm of reasonableness be considered, unless the improvement would yield insignificant additional control.
9. In all cases, a complete BACT analysis must be submitted and must consider environmental and energy, as well as economic impacts.

Cost Calculation for Control Equipment

$$A = (B + C)/D$$

A = Annualized Cost expressed in dollars per ton of pollutant removed.

B = Annualized equipment cost in \$/yr = $PV\{i / [1 - (1 + i)^{-n}]\}$

Where:

PV = Present day value of the equipment or the cost of the equipment today.

i = Interest rate at which the company can borrow money. 10% should be entered into the equation as 0.10; 5% as 0.05.

n = Number of years of the life of the equipment.

C = Annual operating cost is the sum of the cost for spare parts, power, labor, maintenance, etc., less the value for the amount of reclaimed product or by product recovered and used or sold

D = The amount of emission reduction due to the installation and operation of the pollution control equipment in tons/year.

In summary, normally all available control technologies should be ranked, and the most stringent alternative should be considered initially in the BACT analysis. However, when supported by a complete and objective review, technologies that can be demonstrated to be infeasible, unreasonable, or otherwise not achievable because of source-specific energy, economic, environmental, or technological reasons can be set aside.

**Appendix III
Area designations
Nonattainment Areas in Utah⁶**

<u>AREA</u>	<u>POLLUTANT</u>
Salt Lake County	Particulate (PM ₁₀) Sulfur dioxide (SO ₂)
Tooele County (elevations above 5600 feet)	Sulfur dioxide (SO ₂)
Utah County	Particulate (PM ₁₀)
Ogden City	Particulate (PM ₁₀)
Provo/Orem Area	Carbon monoxide (CO)

Maintenance Areas in Utah

<u>AREA</u>	<u>POLLUTANT</u>
Davis County	Ozone (O ₃)
Salt Lake County	Ozone (O ₃)
Salt Lake City	Carbon monoxide (CO)
Ogden City	Carbon monoxide (CO)

If your operation is in a Non-attainment or Maintenance area, you will be required to obtain an appropriate offset for the pollutant specified above. Further, you may be required to perform an air quality modeling analysis as part of your notice of intent. For a more complete information, please call The SIP Emission Inventory Section, or the Technical Analysis Section at [801] 536-4000.

All Other Areas in Utah are Considered Attainment

Note: The designations in this appendix are the official EPA designations as of June 3, 2002. Utah has requested re-designation to attainment for CO in Salt Lake City and Ogden. In addition, the new federal PM_{2.5}, PM₁₀ and ozone standards may lead to future changes. It is recommended that you call the DAQ to find out the attainment status of the area you are considering, when you are anticipating making a modification or new installation.

⁶Non-attainment areas are the areas in which the concentration of one or more pollutants exceeds the national standards for those pollutants.

Appendix IV

Dispersion Modeling Guidelines

http://www.eq.state.ut.us/eqair/aq_home.htm

Important Note: Before undertaking any modeling, please discuss your operations with the staff at the Technical Analysis Section to see if your operation would require a modeling analysis. Contact: Tom Orth (801) 536-4005 and Dave Prey (801) 536-4278).

Engineers and scientists use computer simulations (commonly referred to as dispersion modeling) to estimate the concentration of various pollutants in the air resulting from industrial processes. They do this to acquire a reasonable assurance that the concentration of the pollutants in the air do not adversely affect public health and the environment, or result in a significant reduction in the quality of the air. The following discussion provides a brief outline of the requirements you should know and follow. It is intended to familiarize you with the terminology of modeling.

Definitions:

1. **National Ambient Air Quality Standards (NAAQS)** are federal health-based standards. They were established in the Clean Air Act. These standards must not be exceeded for the six “criteria pollutants” (SO₂, NO₂, PM₁₀, CO, O₃, and lead).
2. **Prevention of Significant Deterioration (PSD) increments** are atmospheric degradation standards. They were established in the Clean Air Act. They represent the maximum increase in airborne concentrations of three pollutants (PM₁₀, NO₂, and SO₂) allowed for new sources, or existing sources.
3. **Hazardous Air Pollutants (HAP)** are the 188 [revised to 187] air pollutants listed in Section 112 of the 1990 Clean Air Act Amendment. Three types of HAPs (acute, chronic, and carcinogenic) are defined in R307-101-2.
4. **Threshold Limit Values (TLV)** are health-based workplace exposure thresholds in mg/m³ or ppm for toxic substances, as published by the American Conference of Governmental Industrial Hygienists in its “Threshold Limit Values and Biological Exposure Indices.”
5. **Emission Threshold Values (ETV)** are the HAP emission levels in pounds per hour above which dispersion modeling analyses are required as part of a complete NOI submitted to UDAQ.
6. **Toxic Screening Levels (TSL)** are screening levels for HAP concentrations in mg/m³. If HAP modeling results indicate the ambient concentration of any HAP exceeds its respective TSL, further documentation to address the HAP impact (as defined in R307-410-4. See Tables IV-1 and IV-2 below) is required as part of a complete NOI. Each HAP has its own TSL (based on its toxicity).

Who is required to do dispersion modeling?

In general, if the pollutants from a new source or an increase in pollution from a proposed modification of an existing source is greater than the levels established in R307-410-3&4, the owner or operator of the facility will be required to include dispersion modeling with the NOI. The modeling requirements for the criteria pollutants and for hazardous air pollutants are discussed separately in the following sections.

1. Criteria Pollutants in Attainment Areas and Maintenance Areas⁷

If the emissions from a proposed source or the emission increases from a proposed modification are equal to or larger than the respective modeling thresholds given in Table IV-1, the source is required to submit a dispersion modeling analysis with its NOI.

Table IV-1. Criteria Pollutants: Minimum Emissions Requiring Modeling
(Compared with Total Controlled Emission Rates for New Sources or Emission Increases for Existing Sources)

<u>Pollutant</u>	<u>Emissions in Tons Per Year</u>
SO ₂	40
NO ₂	40
CO ⁸	100
CO ⁹	250
Lead - all source types	0.6
PM ₁₀ — fugitive emissions (wind erosion, road dust, etc)	5
PM ₁₀ — non-fugitive emissions (baghouses, stacks, tail pipes)	15

2. Hazardous Air Pollutants [HAPs]

If an increase in a HAP emission from your facility equals or exceeds the ETV for that HAP [as calculated from Table IV-2 below], you will be required to include a modeling analysis with your NOI. The analysis should include a discussion of the effect of the HAP on the environment and the public. Sources whose HAP modeling analyses indicate that the airborne concentration level of the HAP would be greater than the HAP's toxic screening level [(TSL), are required to submit with their NOI additional information to be specified by the UDAQ toxicologist. The Division's contact for Toxicology is Dr. Steven Packham, at (801)-536-4036.

Example on how to use Table IV-2: A single-installation source submits the following information with its NOI:

Formaldehyde emission rate = 0.03 lb/hr [this HAP is identified as acute]

Release duration - continuous = 0.03 lb/hr

Release type - stack with rain cap = vertically restricted

Distance to facility boundary - 105 meters > 100 meters [see Table IV-2]

From Table IV-2, the ETF for this facility boundary is 0.18

The TLV for formaldehyde is 0.37 mg/m³, therefore the ETV equals:

$$\text{ETV} = 0.37 \text{ mg/m}^3 \times 0.18 \text{ lb m}^3 / \text{mg hr} = 0.067 \text{ lb/hr}$$

The formaldehyde equivalent maximum release rate of this source (0.03 lb/hr) is less than its ETV of 0.067 lb/hr. In this case, a HAPs modeling analysis is not required. Please note that the calculation for multiple-installation sources is more complicated.

Table IV-2. Emission Threshold Factors (ETF) for Hazardous Air Pollutants (in lb/m³ / mg/hr)

<u>Distance to Property Boundary</u>	<u>Acute HAP</u>	<u>Chronic HAP</u>	<u>Carcinogenic HAP</u>
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⁷The domains of attainment, nonattainment and maintenance areas are listed in Appendix III.

⁸Applicable only to sources that are listed in Utah Air Quality Rules, R307-405-1(5).

⁹Applicable to all sources other than the NOC and US EPA in Quality Rule, R307-405-1(5).

Vertically Restricted and Fugitive Emission Release Points¹⁰

20 meters or less	0.038	0.051	0.017
21 - 50 meters	0.051	0.066	0.022
51 - 100 meters	0.092	0.123	0.041
Beyond 100 meters	0.180	0.269	0.090

Vertically Unrestricted Emission Release Points¹¹

50 meters or less	0.154	0.198	0.066
51 - 100 meters	0.224	0.244	0.081
Beyond 100 meters	0.310	0.368	0.123

How do I do the modeling analysis?

The extent of dispersion modeling required may vary from one source to another. If the ambient concentrations of pollutants from the facility do not exceed the NAAQS, the available PSD increments, or the TSL, only the screen modeling analysis needs to be included in the NOI. For a single source, compliance may often be demonstrated by using a screening model, such as SCREEN3. If the SCREEN3 model shows that the facility will exceed either the NAAQS or the available PSD increments or the TSL or HAPs emission threshold values, a more complex model, such as ISCST3 or AERMOD, may be used to refine the modeling.

For facilities with multiple emission points or various types of complex pollutant dispersion patterns, the applicant may be required to use the more complex models for their analysis. Before conducting a refined modeling analysis, the applicant should submit a written modeling protocol detailing the modeling information and methodology for the UDAQ modeling staff's concurrence.

The document "Utah Division of Air Quality Modeling Guidelines (August 2000)" details what needs to be included in a modeling protocol. This document is available on the UDAQ website http://WWW.EQ.STATE.UT.US/eqair/aq_home.htm.

When modeling for criteria pollutant impacts, if the refined model shows that the concentrations of pollutants from the facility do not exceed the NAAQS, the available PSD increments, or the TSL, the applicant does not need to go further. The applicant should include the modeling analysis in the NOI. If the modeling analysis shows that the concentrations for a pollutant exceed the NAAQS or the available PSD increments, the applicant will need to implement changes or additional controls to the proposed project accordingly prior to granting of an AO by the Division.

If the modeling analysis shows that the concentrations for a HAP exceeds the HAP's TSL, the applicant will need to document health and environmental impacts, exposure conditions, etc., caused by the HAP increase from the facility in support of the NOI. **In this case, the applicant should contact the UDAQ toxicologist.**

What to do to enhance the dispersion?

¹⁰Vertically restricted release is usually caused by a downward or horizontal release, a physical obstruction at the stack top, or a release at a height less than 1.3 times the building height.

¹¹Vertically unrestricted release means the release of an upward flow through a stack without any physical obstruction, and at a height at least 1.3 times the building height.

There are some techniques that, if incorporated in designing or modifying a facility, can effectively enhance the plume rise, and thus reduce the ambient impact of the pollutant emissions in the vicinity of the facility. For example:

- ?? Vent emissions through a stack that releases the pollutants at a height no less than 1.5 times the height of the building or any adjacent structure from ground level.
- ?? Use stacks that vent upward vertically without any physical obstruction to the flow.
- ?? Replace or modify side vents or ninety-degree elbows on roof vents and stacks with stacks that vent vertically unrestricted.
- ?? Install rain catching devices in such a manner that they do not restrict the upward flow at or beyond the stack top during the venting process.

If there are any questions regarding modeling, the NAAQS, PSD increment limits, or dispersion techniques, or if the facility emits hazardous air pollutants for which help is needed in determining TLVs or calculating ETVs, please feel free to contact UDAQ Technical Analysis Section modeling staff.

Appendix V. -- Generic-Permit Forms

Phone: [801] 536-4000

Electronic copies obtainable at <http://www.deq.state.ut.us/eqair/permits/pmtforms.htm>

The following generic-permit forms make it easier to get an Approval Order. If you want to build or operate one of the items in this list, call DAQ and ask for the correct form, fill it out per instructions accompanying the form and send it to DAQ with other information required. You will be able to get a copy through the Internet, if you have access to it.

Please note that if equipment or processes other than those specified below are involved at the facility, you will be required to submit a complete notice of intent before receiving an approval order.

___	Form 1	Owner/Facility Information
___	Form 2	Process Information
___	Form 3	Afterburners
___	Form 4	Flares
___	Form 5	Adsorption Unit
___	Form 6	Cyclone
___	Form 7	Condenser
___	Form 8	Electrical Precipitators
___	Form 9	Scrubber
___	Form 10	Fabric Filter
___	Form 11	Internal Combustion Engines
___	Form 12	Incinerators
___	Form 13	Spray Booths
___	Form 14	Concrete Batch Plants
___	Form 15	Rock Crushing and Screening
___	Form 15b	Registration of Portable Equipment
___	Form 16	Soil/groundwater Re-mediation
___	Form 17	Diesel-powered Standby Generator
___	Form 17a	Natural Gas standby Generators
___	Form 18	Portable Hot Mix Drum Asphalt Plants
___	Form 19	Fuel-Burning Equipment (Boilers, Heaters, Steam Generators)
___	Form 20	Organic Liquid Storage Tank
___	Form 21	Solvent Metal Cleaning (de-greasers)
___	Form 22	Combustion Turbines
___	Form 23	Rotary Kilns
___	Form 24	Parking Lots

Appendix VI
Pre-Notice of Intent Meeting – a Check List

Appendix VII The Fee Schedule

The Utah law provides for the Division of Air Quality to collect three kinds of fees for the work it performs in the permitting process. These are: 1) An application filing fee¹²; 2) An application [Notice of Intent] review fee; 3) An annual emission fee. Each year, the legislature reviews and revises the fee schedule as necessary.

6. The Application Filing Fees:

1.Name changes	\$100
2.Small-source Registrations	\$250
3.Soil Re-mediation	\$250
4.New Minor Sources	\$500
5.Major Modifications*	\$500
6.Minor Modifications*	\$500
7.Replacement-in-Kind changes	\$500
8.Operating, but un-permitted Sources	\$1,500
9.Un-permitted emission points	\$1,500
10. New Major PSD Sources	\$5,000

* See definitions in the next section

II The NOI Review Fees

These fees depend on the source's size category and its location as defined and specified below. The specified fees are based on the length of time it would normally take to review an NOI in various categories and to issue an AO [see Section B below]. **If it takes longer than the expected time to review your NOI, the law currently authorizes DAQ to charge \$70 per hour for the additional time spent on your application.**

A. Definition of Source's Size Category¹³

Major Source -- A general definition. A source with potential to emit at least 100 tons per year of any pollutant. [See Utah Air Quality Rule, R307-101-2 for precise definition.]

¹²In its July 2002 Special Session, the Utah Legislature approved the filing fee for air quality permit applications. This fee is in addition to the fee the Division charges for reviewing applications and issuing an approval order. The application fee will become effective on September 8, 2002.

¹³Emissions specified here are controlled emissions, that is to say, the emissions that result after the application of BACT [best available control technology] or LAER [lowest achievable emission rate.]

Major PSD Source -- A source emitting in an attainment area 250 tons per year or larger of a any pollutant. Also, any one of 27 source categories that emits in an attainment area at least 100 tons per year. [Please see R307-405 for complete definitions and a list of the 27 categories.]

Minor Source -- A source that is not a major source.

Major Modification -- Emission increases of a major or minor source equal or larger than the values given in Table 2. below.

Minor Modification -- Emission increases with a magnitude less than the values given in the Table below.

Table -- Significant Emission Levels [Tons per Year]

PM ₁₀	15
SO ₂ , NO _x , VOC	40
CO	100
Lead	0.6
Asbestos	0.007
Beryllium	0.0004
Mercury	0.1
Vinyl Chloride	1
Fluorides	3
Sulfuric Acid Mist	7
Total Reduced Sulfur	10

Attainment Area -- An area, a city, or a county designated as **NOT** in violation of NAAQS.

Non-attainment Area -- A area, a city, or a county in which the concentration of one or more pollutants exceed the national standards for those pollutants.

B. NOI Review Time and Fees:

Note: The base fee must be paid at the time of the NOI submittal.

For each of the size categories listed below, DAQ has estimated an expected time and a fee schedule for review of the respective NOI. These estimations are based on DAQ's experience in reviewing an NOI. If the review of an NOI takes longer than the specified expected hours time, DAQ will charge the base fee plus \$70/hr for each additional hour. For example, if DAQ spends up to 450 hours to review an NOI for a new major source in a non-attainment area, the fee will be \$31,500.00. If it would take DAQ 455 hours, the fee will be \$31,500.00 for the base fee plus \$350 for the additional five hours over 450.

If you have a question, please call DAQ at [801] 536-4000 and ask to speak with the NSR engineer on duty.

B.1 Sources in Non-attainment Areas:

<u>Source Type</u>	<u>Fee Schedule</u>
New major source [450 hrs.]	\$31,500.00
Existing major source with a major modification [450 hrs]	\$31,500.00
Existing minor source with major mod.[450 hrs]	\$31,500.00
Existing major source with a minor modification [20 hrs]	\$1,400.00
New minor source [20 hrs]	\$1,400.00
Existing minor source with minor mod. [20 hrs]	\$1,400.00

B.2 Sources in Attainment Areas:

New major source [300 hrs]	\$21,000.00
Existing major source with major modification [300 hrs]	\$21,000.00
Existing minor source with major modification [300 hrs]	\$21,000.00
Existing major source with minor modification [20 hrs]	\$1,400.00
New minor source [20 hrs]	\$1,400.00
Existing minor source with minor modification [20 hrs]	\$1,400.00

B.3 Generic Permits [Standardized Review/BACT]

New minor sources [8 hrs]	\$560.00
Existing minor sources with minor modification [8 hrs]	\$560.00

B.4 *De minimis [new or modified] Sources:* Actual review time @ \$70/hour
[De minimis = Each uncontrolled emission less than 5 tons per year]

B.5 Name change & AO Transfer \$350.00

B.6 Others, which may include the following:

Applications for sales & use tax exemption	\$70/hr.
Soil re-mediation approval letters	\$70/hr.
Experimental approval orders and flexibility changes	\$70/hr
Replacement in kind	\$70/hr.
Review Environmental Impact analyses	\$70/hr
De minimis determination	\$70/hr
Other technical services	\$70/hr.

III. Annual Emission Fees:

All Title V [Part 70] sources are charged an annual emissions fee based on the amount of pollutants they emit to the air. This fee pays for the administrative cost of the Operating Permit Program. Unlike NOI reviews, there is no additional fee for the issuance of an OP; the issuance of an OP is paid for by the annual emissions fee. If you are unsure whether or not you are a Title V [Part 70] source, or you would like to know the current rate for the annual emissions fee, call the Operating Permit Section at (801) 536-

4000.

